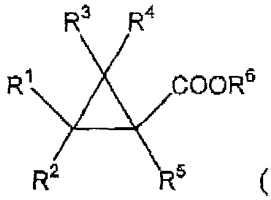
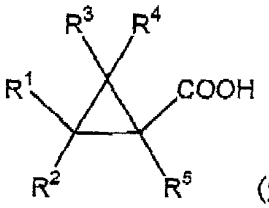
Claims:

1. A process for producing a cyclopropanecarboxylate of formula (1):



(1),

which process comprises reacting cyclopropanecarboxylic acid of formula (2):



(2),

with a monohydroxy compound of formula (3):

$$R^6OH \qquad (3),$$

in the presence of

a catalyst compound comprising an element of to Group 4 of the Periodic Table of Elements,

wherein R^1, R^2, R^3, R^4, and R^5 independently represent

a hydrogen atom, a halogen atom,

an alkyl group which may be substituted,

an alkenyl group which may be substituted,

an alkynyl group which may be substituted, or

an aryl group which may be substituted; and

R^6 represents

an alkyl group which may be substituted, or

an aryl group which may be substituted.

2. A process according to claim 1, wherein

R^1, R^2, R^3, R^4, and R^5 independently represent

a hydrogen atom, a halogen atom,

an alkyl group,

an alkenyl group,

an alkynyl group, or

an aryl group, and

wherein the alkyl, alkenyl, and alkynyl groups may be independently substituted with at least one member selected from

a halogen atom, an alkoxy group,

an alkoxy-carbonyl group,

a haloalkoxy-carbonyl group,

an aryl group,

a halocycloalkylidene group,

an alkoxyimino group,

an alkylsulfonyl group,

an alkylsulfonyloxy group, and

a hydroxysulfinyl group; and

R^6 represents

an alkyl group, which may be substituted with a member selected from

a halogen atom, a cyano group, a nitro group,

an alkenyl group, a haloalkenyl group,

an alkynyl group,

an aryl or heterocyclic group which may be substituted with at lest one member selected from:

an alkyl group, a haloalkyl group,

an alkoxy group, a haloalkoxy group,

an alkoxyalkyl group,
an alkenyl group, an alkynyl group,
an aryl group, an aryoxy group,
a haloaryloxy group,
an aralkyl group,
an acyl group,
a haloacyloxyalkyl group,
an amino group, and a halogen atom; or

R^6 represents:

a 1-, or 2-indanyl group which may be substituted with an alkynyl group or an aryl or heteroaryl group;

a cycloalkenyl group substituted with at least one member selected from an oxo group, an alkyl group, an alkenyl and an alkynyl group; or

an aryl group which may be substituted with a phenyl, an alkynyl group, an acyl group, a halogen atom, an alkoxy group, or an alkyl group.

3. A process according to claim 2, wherein

R^1, R^2, R^3, R^4, and R^5 independently represent
a hydrogen atom, a halogen atom,
an (C1-C10)alkyl group,
an (C2-C5)alkenyl group,
an (C2-C5)alkynyl group, or
an (C6-C14)aryl group, and
wherein the alkyl, alkenyl, and alkynyl groups may be independently substituted with at least one member selected from
a halogen atom, an (C1-C4)alkoxy group,

an (C1-C4)alkoxy-carbonyl group,

a halo(C1-C4)alkoxy-carbonyl group,

an (C6-C14)aryl group,

a halo(C3-C5)cycloalkylidene group,

an (C1-C3)alkoxyimino group,

an (C1-C4)alkylsulfonyl group,

an (C1-C4)alkylsulfonyloxy group, and

a hydroxysulfinyl group; and

R^6 represents

an (C1-C10)alkyl group, which may be substituted with a member selected from

a halogen atom, a cyano group, a nitro group,

an (C2-C5)alkenyl group, a halo(C2-C5)alkenyl group,

an (C2-C5)alkynyl group,

an (C6-C14)aryl or heterocyclic group which may be substituted with at lest one member selected from:

an (C1-C14)alkyl group, a halo(C1-C14)alkyl group,

an (C1-C4)alkoxy group, a halo(C1-C4)alkoxy group,

an (C1-C4)alkoxy(c1-C14)alkyl group,

an (C2-C5)alkenyl group, an (C2-C5)alkynyl group,

an (C6-C14)aryl group, an (C6-C14)aryoxy group,

a halo(C6-C14)aryloxy group,

an (C7-C8)aralkyl group,

an (C1-C2)acyl group,

a haloacyloxy(C1-C14)alkyl group,

an amino group, and a halogen atom; or

R^6 represents:

a 1-, or 2-indanyl group which may be substituted with an (C2-C5)alkynyl group or an (C6-C14)aryl or 5-membered

heteroaryl group;

a cycloalkenyl group substituted with at least one member selected from an oxo group, an (C1-C14)alkyl group, an (C2-C5)alkenyl and an (C2-C5)alkynyl group; or

an (C6-C14)aryl group which may be substituted with a phenyl, an (C2-C5)alkynyl group, a (C1-C2)acyl group, a halogen atom, a (C1-C4)alkoxy group, or a (C1-C14)alkyl group.

4. A process according to claim 1 or 2, wherein the catalyst compound is a zirconium, hafnium or titanium compound.

5. A process according to claim 4, wherein the catalyst compound is a zirconium, hafnium or titanium compound having Lewis acidity.

6. A process according to claim 4 or 5, wherein the catalyst compound is a compound represented by formula (4):

$$M(O)_m(X)_n(Y)_{4-2m-n} \qquad (4)$$

wherein M represents an element of Group 4 of the Periodic Table of Elements; X and Y independently represent a halogen atom, an alkoxy group, an acetylacetonate group, an acyloxy group, an amino group which may be substituted with up to two alkyl groups, or a cyclopentadienyl group; and m is equal to 0 or 1, and n is equal to 0, 1, or 2.

7. A process according to claim 6, wherein M represents zirconium.

8. A process according to claim 6, wherein M represents hafnium or titanium.

9. A process according to claim 7, wherein the zirconium compound is zirconium tetrachloride, a zirconocene compound, or zirconium alkoxide.

10. A process according to claim 8, wherein the hafnium or titanium compound is hafnium or titanium halide, a hafnium or titanium alkoxide, or an amide compound of hafnium or titanium.

11. A process according to any one of claims 1 to 10, wherein the cyclopropanecarboxylic acid of formula (2) is 2,2-dimethyl-3-(2,2-dichlorovinyl)cyclopropane-carboxylic acid.

12. A process according to any one of claims 1 to 10, wherein the cyclopropanecarboxylic acid of formula (2) is 2,2-dimethyl-3-(2-methyl-1-propenyl)cyclopropane-carboxylic acid.

13. A process according to any one of claims 1 to 12, wherein the monohydroxy compound of formula (3) is a primary alcohol.

14. A process according to any one of Claims 1 to 12, wherein the monohydroxy compound is a compound of formula (3), wherein R^6 represents a methyl or ethyl group substituted with at least one member selected from the aryl group which may be substituted, a cyano group, and the alkynyl group.

15. A process according to any one of Claims 1 to 13, wherein the monohydroxy compound of formula (3) is 3-phenoxybenzyl alcohol.

16. A process according to any one of claims 1 to 11, wherein the monohydroxy compound of formula (3) is 4-hydroxy-3-methyl-2-(2-propenyl)-2-cyclopentene-1-one.

17. A process according to any one of claims 1 to 11, wherein the monohydroxy compound of formula (3) is 4-hydroxy-3-methyl-2-(2-propynyl)-2-cyclopentene-1-one.